

## **Chronological Description of Mining & Reclamation Operations Moose Creek Terrace Pit**

(all descriptions tied to MCT map \*\*\*\*\*)

### **Phase I – Year 1 - Extraction Unit 1 and Operational Area**

**Step 1 - Site Survey:** In early to late June, the site should be visited to groundtruth the operational design. Specified areas of phase I should be inspected and preferably staked to provide visual and operational limits to boundaries for clearing and excavation as per design. Details on silt fencing, berming, or other runoff and dust control considerations should be made on this visit. Operational coordinates (especially elevations) should be determined (surveyed if necessary) to maximize operational space, to control surface drainage, and to provide any other resource protection or surface preparation needs.

**Step 2 -Operational Site Clearing:** In late June or early July (dependent on seasonal frost), construct a 300' long, 18' wide access road (using a dozer) from the existing Moose Creek road (~1880' elevation) to the 2<sup>nd</sup> terrace (~1850' elevation). Side cast from the road cut will be used for a partial cut & fill to the north side and onto the 2<sup>nd</sup> terrace. The dozer(s) will then begin to clear the vegetation mat and silt overburden in the primary crusher-stockpile space in the Operations Area (approx. 2.22 acres) and placing the overburden in Topsoil/Overburden Stockpile area #1. This clearing activity will provide a working surface for the crusher/screenplant (0.46 ac), stockpile/reject area (0.66 ac), and loading – turn-around operational areas remaining between the crusher and stockpile areas and the toe of the 1<sup>st</sup> or uppermost terrace (approximately 1.1 ac). In clearing the crusher-stockpile-operations area, we are assuming a 6" thick vegetation mat (combination of vegetation and "A" layer) and a 10" thick silt layer. The total volume for the 16" thick surface of operations area is estimated at 5900 lcys, and can be placed in Topsoil/Overburden Area #1, which will contain about 4000 cubic yards (assuming a pile 20 feet high at the apex, with 1:1 angle of repose), and the remaining can also be stored in Storage Area #2 which will contain about 4200 lcys. The time requirements for this clearing are assumed to be 4 days (32 hours) using a single D8 Cat.

If portions of the vegetation mat are cohesive enough, they should be transplanted to an area in need of re-vegetation as soon as possible. If re-veg areas are unavailable, the cohesive mat should be stored in a protected area of the T/OB areas, and in minimal thickness to maximize the living plant material.

**Step 3 – Operational Site & Extraction Unit 1 Clearing:** Extraction Area #1 is next cleared (1.1 acres of surface) with the overburden placed in Topsoil/Overburden Areas #2 and #3. Extraction Area #1 is estimated to contain 2800 lcys of overburden, of which 2200 lcys will go into T/OB Area #2, and the remaining 600 lcys can go into Topsoil/Overburden Area #3. The time requirements for this clearing are estimated at 2 days with a single D8 Cat. After clearing and leveling of the site(s) are completed, the crusher/screenplant can be brought in and set up, and other support requirements (tool crib, fuel station, office trailer, etc) as appropriate.

**Step 4 – Mining Extraction Unit 1:** After the ground is thawed to full seasonal depth (late July?) mining can begin on Extraction Unit 1. Excavation can be initiated at any point along the northern face of Unit 1, with the progression advancing from north to south to extract the full 17,500 bcy, or 21,000 lcy. An irregular bedrock surface (pit floor) is anticipated, with potential for bedrock protrusions at shallow depths. This may complicate extraction progress and limit the usable volume of material in this extraction unit. If pit closure is anticipated after extraction is nearly completed in unit 1, the final east-west line of vertical extraction should be about 40 feet short (further north) of the southern boundary of the unit as shown on the plan map.

### **Phase II – Year ? – Preparation and Mining of Extraction Unit 2:**

**Step 1 - Extraction Unit 2 Clearing:** Begin clearing Extraction Area #2 is cleared (2.5 acres of surface) with the overburden placed in Topsoil/Overburden Areas #2 and #3. Extraction Area #2 is estimated to contain 6523 lcys of overburden, of which will go into T/OB Area #2, and Topsoil/Overburden Area #3, with additional storage space (overflow) now being available in extraction unit #1.

**Step 2 – Optional Reclamation:** If adequate operational space is available (an excess of space), extraction unit #1 can be backfilled and reclaimed as appropriate. Oversize and other reject materials should be moved and graded over the surface of the unneeded portions of Extraction Unit #1 and other operational surfaces.

**Step 3 Mining Extraction Unit 2:** Mining cuts made to Extraction unit #2 can begin on the north or east sides, again depending on available space and rehab intentions. Extraction Unit 2 should be excavated to the south only to the catch or expected to of the backslope to maintain the final 1½:1 backslope angle. Extraction could occur from the east to the west, thus providing new, potentially unneeded surface for immediate reclamation...(or see Phase II below).

**Phase III – Rehabilitation and Reclamation of Units 1 & 2 and Option Extraction Unit 3:**

Upon exhausting the available gravel in extraction units 1 & 2, three options are available; 1) Close down the pit, and complete full reclamation, 2) extract from unit 3, or 3) continue cutting into the exposed terrace face due south of extraction unit 2. If option 1 is chosen (close down pit), the entire pit floor (operations and extraction areas) are to be cleared of equipment, stockpiles are to be removed, and reject material should be spread over the entire surface. Excessive reject material can be used to create undulating mounds or to backfill at the backwall, thus easing the backwall grade. The backwall should be blended with the existing terrace configuration on each (east and west) end. The remaining overburden/topsoil should be spread last, with remaining veg mats placed on the surface as appropriate.